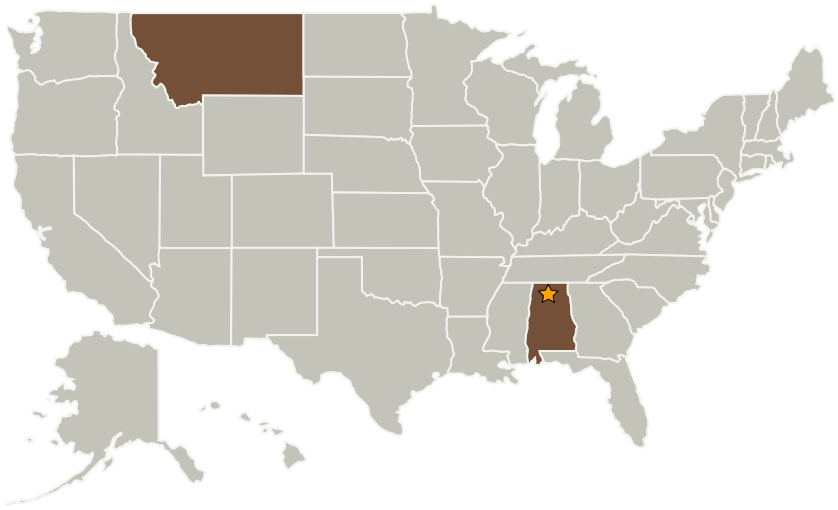
Electro-Optic Tunable Laser Sensor, Phase I

Completed Technology Project (2009 - 2009)

Project Introduction

This Small Business Innovation Research Phase I project will develop a compact, rugged, rapidly and widely tunable laser based on a quantum cascade diode laser at mid-infrared wavelengths. The key innovation in this effort is the use of an engineered electro-optic tuning element in an external cavity laser to provide control of the laser wavelength through an applied voltage. AdvR has previously demonstrated the feasibility of large tuning range matching that of mechanically tuned lasers, yet also offering low cost, smaller size, robustness, portability, and tuning speed that is faster by six orders of magnitude. The Phase I effort will investigate adapting the external cavity tuning techniques to quantum cascade lasers to generate tunable wavelengths for mid-infrared spectroscopy.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Marshall Space Flight Center(MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
ADVR, Inc.	Supporting Organization	Industry	Bozeman, Montana

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations	
Alabama	Montana

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers